

A New Species of *Parasenecio* (Asteraceae), *P. hosoianus*, from Aomori Prefecture, Northern Japan

Yuichi KADOTA

Deaprtment of Botany,
National Museum of Nature and Science
(Former National Science Museum, Tokyo)
4-1-1, Amakubo, Tsukuba, 305-0005 JAPAN
E-mail: kadota@kahaku.go.jp

(Received on August 20, 2008)

A new species of *Parasenecio* (Asteraceae), *P. hosoianus* Kadota, is described from Aomori Pref., northern Japan. *Parasenecio hosoianus* is similar to *P. ogamontanus* Kadota in having obliquely pentagonal-reniform leaf blades, but is different from the latter by winged petioles with distinct auriculate bases, the number of involucral phyllaries (8), the number of florets per head (10–14), floret throats two times longer than tubes, basally glandular-dotted involucres and larger habit. *Parasenecio hosoianus* is endemic to Aomori Pref. (mainly in Tsugaru zone) and the northernmost part of Akita Pref.

Key words: Japan, new species, *Parasenecio hosoianus*, *Parasenecio ogamontanus*, *Parasenecio tanakae*.

Genus *Parasenecio* W. W. Sm. & J. Small (Asteraceae) is well known as one of the Sino-Japanese floristic elements and also of the Asian–North American elements (e.g., Koyama 1983, Chen 1999). Koyama (1995) published a conclusive treatment of the genus in Japan, however, several undescribed taxa still remain to be solved particularly in northern Japan (Kadota unpublished). Among them a species, *P. ogamontanus*, was recently described from the Oga Peninsula, Akita Prefecture, northern Honshu, Japan (Kadota 2005). This species is unique in having a peculiar shape of leaf blades; obliquely pentagonal-reniform in outline and very shallowly 5-lobed (clefted). Terminal and lateral lobes are short acute at apices.

Recently Mr. K. Hosoi (Aomori-shi, Aomori Pref.) kindly informed me that *P. ogamontanus* was distributed also in Aomori

Prefecture, neighbouring in northern Akita Prefecture, and brought many herbarium specimens to me in autumn 2006. He additionally commented that there seemed to be a slight difference in leaf shape between *P. ogamontanus* and the plants from Aomori Prefecture. Actually the materials from Aomori Prefecture are similar to those from the Oga Peninsula in general outline of leaf, but they are significantly different from those from the Oga Peninsula in having rather obtuse terminal leaf lobes and winged petioles with clearly auriculate bases. It was therefore considered that the plants from Aomori Prefecture were a new taxon differing from *P. ogamontanus*.

In September 2007 I made field studies in Aomori Prefecture and its neighbouring areas under the guidance of Mr. K. Hosoi and his colleagues. As a result it is clarified that the plant in question belongs to an

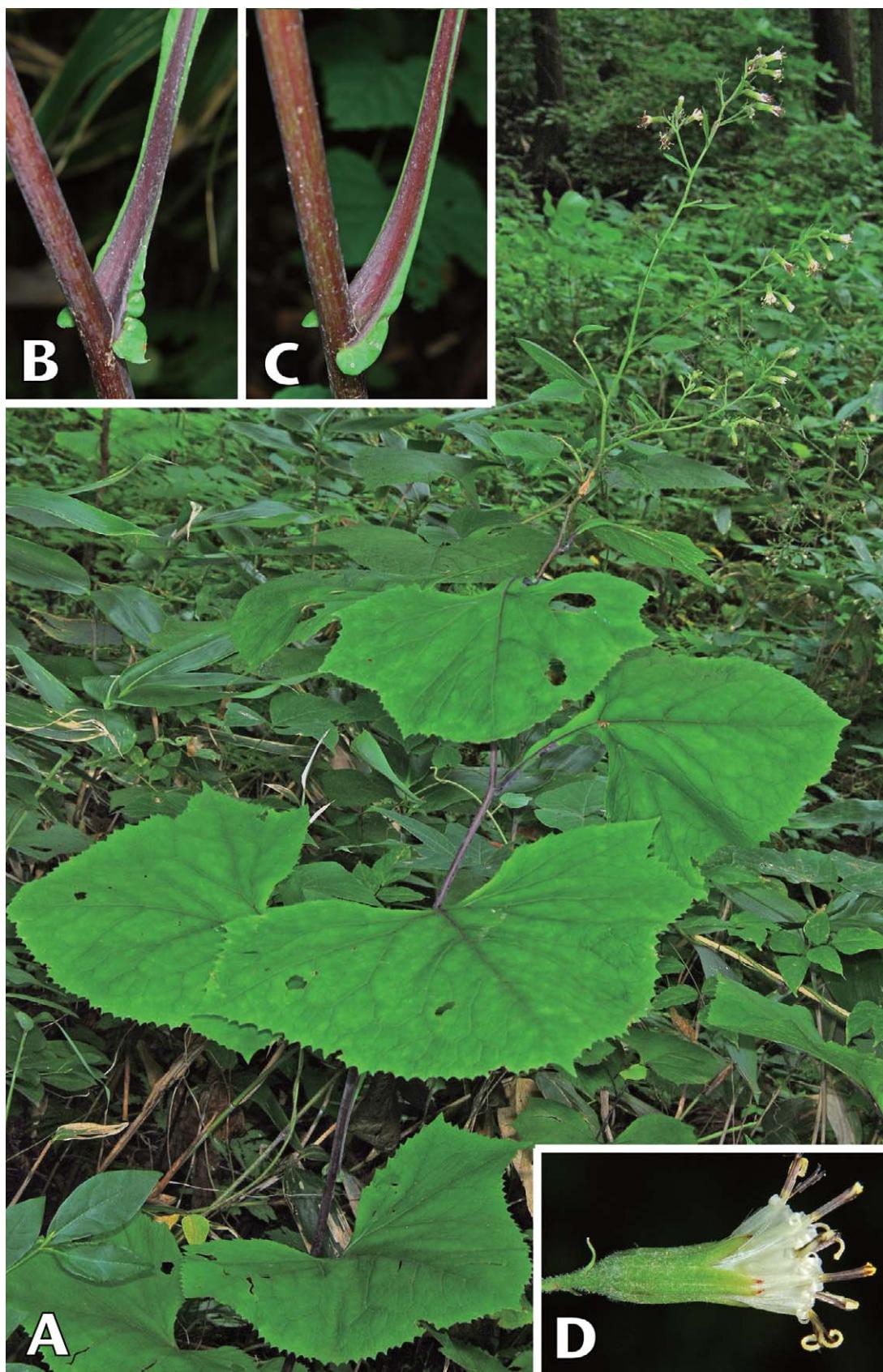


Fig. 1. *Parasenecio hosoianus* Kadota. A. Habit. B-C. Auriculate base of petioles. B. Acute auricle. C. Roundish auricle. D. Involucre. All photos were taken at Hachimori-yama Camp Site, Fukaura-machi, Nishi-Tsugaru-gun, Aomori Pref., northern Honshu, Japan, on 5 Sept. 2007.

undescribed species and is distributed mainly in the Japan Sea side (Tsugaru area) of Aomori Prefecture. Here the plant is described as a new species, *Parasenecio hosoianus* (Fig. 1), after the discoverer of this species.

Taxonomic treatment

Parasenecio (sect. *Koyamacalia* ser. *Koyamacalia*) **hosoianus** Kadota, sp. nov.

[Figs. 1–2]

Haec planta *Parasenecio ogamontano* proxima, sed phyllariis involucrorum 8, flosculis 10–14, involuciis basi glandulosopunctatis, faucibus flosculorum tubis duplo longioribus et habitu maginore differt.

TYPE: JAPAN: Honshu; Aomori Pref., Nishi-Tsugaru-gun, Fukaura-machi, along the River Sasanai-gawa, 40°33'16"N 140°02'10"E, alt. 260 m, 5 Sept. 2007, Y. Kadota 074216 (TNS 770884—holotype; Fig. 2).

A robust perennial, 0.5–2 m tall or taller. Rootstock rather robust, running vertically to oblique, 3–12 mm in diameter, with fibrous roots. Stem suberect to declining, straight but slightly zigzag in the upper parts, much branched, terete, striate, densely pubescent with brownish multicellular hairs, 4–10 mm in diameter at base. Basal leaves withering at anthesis. Cauline leaves 4–9, deep green above, herbaceous; blades obliquely pentagonal-reniform, 5–27 cm long, 10–44 cm wide, wider than long, 5-clefted with obtuse, roundish terminal lobes and with acute, short-triangular lateral lobes, palmately veined, coarsely dentate, broadly cordate to truncate at base, glabrous or sparingly pubescent with brownish multicellular hairs on both sides; petioles 6–8 cm long, glabrous, alate with wings 5–20 mm broad at apices, auriculate at base; auricles acute (Fig. 1B) to roundish (Fig. 1C). Flowers in September. Capitula numerous in a loose, panicle to compound raceme, oblique to nodding; florets 10–14 per capitulum; subtending leaves

7–10, broadly ovate to lanceolate, foliaceous, 0.5–10 cm long; peduncles 5–10 mm long, sparingly pubescent with light brownish multicellular hairs, bracteate with linear bracts 1–2 mm long. Involucres narrowly cylindric, (8–)10–11 mm long, 3–4 mm in diameter, almost glabrous but sparingly glandular-spotted at base; phyllaries 8, herbaceous, ca. 10 mm long, 1–2 mm wide, narrowly ovato-lanceolate, acuminate to acute at apex. Collorae white, tinged with yellow, 7–9 mm long; lobes 1 mm long; throats 4–6 mm long; tubes 2–3 mm long, 1/2 or shorter than the throats. Achenes cylindric, 6–7 mm long, ca. 0.5 mm in diameter, prominently furrowed; pappi white, 5–8 mm long.

Japanese name: Tsugaru-kōmori.

新和名：ツガルコウモリ

Distribution: Aomori (Tsugaru area) and Akita (the northernmost part) Prefs. (Fig. 3). Endemic to Japan.

Specimens examined: JAPAN: Honshu; **Aomori Pref.**, Higashi-Tsugaru-gun, Sotogahama-machi, Min'maya Masakari-domari—Cape Tappi-zaki, 9 Sept. 1962, H. Koyama 1577 (TNS 245670); Mt. Masukawa-dake, 3 Sept. 2003, K. Hosoi s.n. (Herb. Aomori Pref. Mus.). Hirosaki-shi, Mt. Iwaki-san, 30 Sept. 2007, Y. Shima s.n. (TNS 770612). Nishimeya-mura, An'mon-no-taki Fall, 40°31'18"N 140°10'32"E, alt. 200 m, 4 Sept. 2007, Y. Kadota 074003 (TNS 770545–770548). Nishi-Tsugaru-gun, Ajigasawa-machi, Tsugaru-tōge Pass—Akaishi-ōhashi Bridge, 40°34'04"N 140°09'04"E, alt. 610 m, 4 Sept. 2007, Y. Kadota 074004–074007 (TNS 770533–770544); the entrance of Mt. Futatsu-mori, 8 Sept. 2007, Y. Shima s.n. (TNS 770600). Fukaura-machi, Mt. Hitotsu-mori, cult. at Aomori-shi, 3 Sept. 1983, K. Hosoi s.n. (Herb. Aomori Pref. Mus.); Mt. Hitotsu-mori, 13 Sept. 1992, K. Hosoi s.n. (Herb. Aomori Pref. Mus.); Mt. Shirakami-dake, 17 Sept. 1988, K. Hosoi s.n. (Herb. Aomori Pref. Mus.); Kurotsuki, Mt. Shirakami-dake, 10 Sept. 2007, Y. Shima s.n. (TNS 770601, 770603, 770604, 770605); Mt. Shirakami-dake, at the junction of Mt. Mate-yama, 10 Sept. 2007, Y. Shima s.n. (TNS 770607); Mt. Ōkuzure-yama, 2 Oct. 1983, K. Hosoi s.n. (Herb. Aomori Pref. Mus.); Mt. Ōkuzure-yama, 18 Sept. 1988, K. Hosoi s.n. (Herb. Aomori Pref. Mus.); Lake Jūni-ko, at the entrance of Mt. Ōkuzure-yama, 40°33'40"N 139°59'10"E, alt. 230 m, 5 Sept. 2007, Y.



Fig. 2. Type specimen of *Parasenecio hosoianus* Kadota (JAPAN: Honshu; Aomori Pref., Nishi-Tsugaru-gun, Fukaura-machi, along the River Sasanai-gawa, alt. 260 m, 5 Sept. 2007, Y. Kadota 074216 (TNS 770884, holotype).

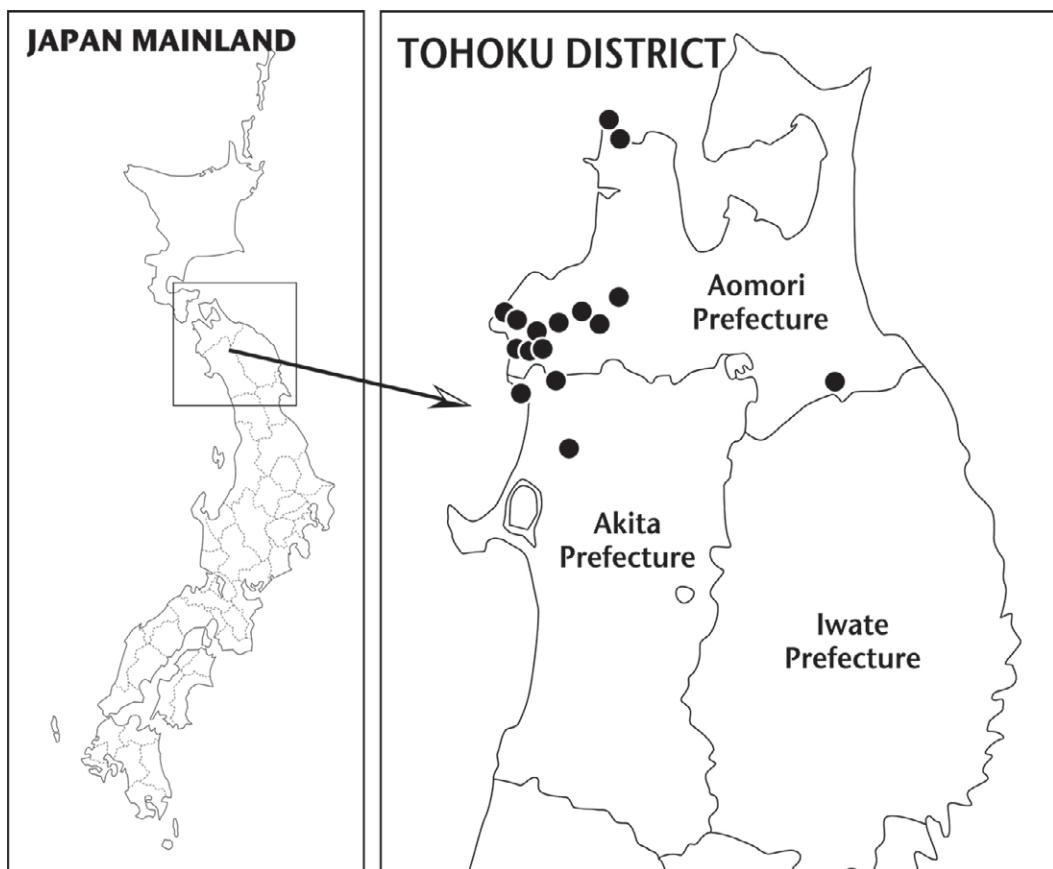


Fig. 3. Distribution of *Parasenecio hosoianus* Kadota.

Kadota 074012–074014 (TNS 770893–770896); Chôkei-daira, Mt. Chausu-yama, 14 Sept. 2007, Y. Shima s.n. (TNS 770607, 770608, 770609); along the River Sasanai-gawa, 40°33'16"N 140°02'10"E, alt. 260 m, 5 Sept. 2007, Y. Kadota 074215, 074222 (TNS 770885, 770886–770888); Fukaura Okazaki, Fukaura House of Hirosaki Univ., 15 Sept. 2003, K. Hosoi s.n. (Herb. Aomori Pref. Mus.); Fukaura, Hachimori-yama Camp Site, 40°38'10"N 139°54'43"E, alt. 130 m, 5 Sept. 2007, Y. Kadota 074211–074213 (TNS 770588–770590). San'nohe-gun, San'nohe-machi, Medoki, Kami-Medoki, 40°21'48"N 141°15'53"E, alt. 150 m, 7 Sept. 2007, Y. Kadota 074360 (TNS 770558). **Akita Pref.**, Yamamoto-gun, Happô-cho, Iwadate, 15 Sept. 2007, Y. Shima s.n. (TNS 770610). Noshiro-shi, Futatsui-machi, Nibuna, 18 Aug. 1938, G. Furuya 4303 (TNS 125684).

Parasenecio hosoianus is distinguished from *P. ogamontanus* by winged petioles with an auriculate base, the number of involucral phyllaries (8), the number of florets per head (10–14), floret throats two

times longer than tubes and basally glandular-dotted involucres. In *P. ogamontanus* the plant is usually less than 80 cm tall while it frequently attains to 2 m or taller in *P. hosoianus*. In due course inflorescences of *P. hosoianus* correspondingly become larger and panicles or compound racemes.

Parasenecio tanake (Franch. & Sav.) Kadota, stat. nov. [basionym: *Senecio farfarifolius* Siebold & Zucc. var. *tanakae* Franch. & Sav., Enum. Pl. Jap. II: 653 (1879)–*Cacalia hastata* L. subsp. *tanakae* (Franch. & Sav.) H. Koyama in Mem. Fac. Sci. Kyoto Univ., ser. B, 2: 179 (1969)–*Parasenecio hastat* (L.) H. Koyama subsp. *tanakae* (Franch. & Sav.) H. Koyama, Fl. Jap. IIIb: 52 (1995)] is different from *P. hosoianus* by having broadly winged petioles with prominently auriculate bases. *Parasenecio chokaiensis* (Kudo) Kadota (2005) is

discriminated from *P. hosoianus* by the petioles without wings nor auricles. Both in *P. chokaiensis* and *P. tanakae* terminal lobes of leaf blades are acute at apices and the leaf blades are triangular in outline.

Parasenecio kamtschaticus (Maxim.) Kadota, stat. nov. [basionym: *Senecio dahuricus* Sch. Bip. β. *kamtschaticus* Maxim. in Bull. Acad. Sci. St.-Pétersb. **19**: 486 (1874)–*Cacalia auriculata* DC. var. *kamtschatica* (Maxim.) Koidz. in J. Coll. Sci., Univ. Tokyo **27**: 121 (1910)–*Parasenecio auriculatus* (DC.) J. R. Grant var. *kamtschaticus* (Maxim.) H. Koyama, Fl. Jap. **IIIb**: 50 (1995)] is distributed in Japan (Hokkaido and Tohoku), the Habomais (Shikotan Island), the Kuriles and Kamchatska. Within the distribution range of *P. kamtschaticus* the plants from Tohoku (Aomori and Akita Prefs.) tend to be larger (tetraploid; cf. Koyama 1966). They are similar to *P. hosoianus* in general outline of leaf blade (obliquely pentagonal-reniform). However, the blade is more coarsely dentate and lobes of leaf blade come to be acuminate in the Tohoku plants of *P. kamtschaticus*.

Parasenecio kamtschaticus is also characterized by having narrow racemes and five involucral phyllaries and is clearly distinguished from *P. hosoianus* by the above-mentioned traits.

I should thank the Curators of the Herbaria KYO, TI and TNS.

References

- Chen Y. L. 1999. *Parasenecio* W. W. Smith & J. Small. Flora Reipubl. Popul. Sinicae **77** (1): 19–87. Science Press, Beijing (in Chinese).
- Kadota Y. 2005. A new species of *Parasenecio* (Asteraceae), *P. ogamontanus*, from Akita Prefecture, northern Japan. J. Jpn. Bot. **80**: 214–220.
- Koyama H. 1966. Cytotaxonomic studies of Compositae. 2. On *Cacalia auriculata* var. *kamtschatica*. Acta Phytotax. Geobot. **22**: 11–14.
- Koyama H. 1983. Phytogeography of some genera of the Compositae confined to Japan and eastern United States. Acta Phytotax. Geobot. **34**: 178–191.
- Koyama H. 1995. *Parasenecio* W. W. Sm. et J. Small. In: Iwatsuki K., Yamazaki T., Boufford D. E. and Ohba H. (eds.), Flora of Japan **IIIb**: 47–53. Kodansha Ltd., Tokyo.

門田裕一：青森県産コウモリソウ属（キク科）の
1新種、ツガルコウモリ

青森県津軽地方からキク科コウモリソウ属の1新種、ツガルコウモリ *Parasenecio hosoianus* Kadota を記載した。種小名は発見者である細井幸兵衛氏への献名である。

ツガルコウモリの葉身は、偏五角形状腎円形で（概形は三角形状とならない），極く浅く五裂し，頂裂片は先端が尾状に短く尖り，側裂片の先端は尾状に尖る。この葉形はコウモリソウ属においては特異なものであるが，秋田県男鹿半島から記載されたオガコウモリ *P. ogamontanus* Kadota のそれによく似ている。しかし，ツガルコウモリでは側裂片の先端が尾状に突き出す程度が大きいので，オガコウモリの葉身の概形とはまた異なる。また，ツガルコウモリでは，オガコウモリよりも葉柄の翼が発達し，明瞭に抱茎するので，この点でも容易に区別できる。ツガルコウモリは近縁なオガコウモリからさらに次のような点でも異なっている。

①総苞片は8個，②頭花当たりの小花は10–14個，
 ③小花の広筒部は狭筒部の二倍長となり，④総苞の基部に腺点があり，⑤植物体はさらに大きく，しばしば高さ2メートルを超える，花序もそれに伴つて大型となり，円錐状-複総状花序となる。

イヌドウナ *P. tanakae* (Franch. & Sav.) Kadota は葉柄の全体にわたって翼が著しく発達し，基部は耳状に広く抱茎する点でツガルコウモリと異なる。コバナノコウモリ（チョウカイコウモリ）*P.*

chokaiensis (Kudo) Kadota は葉柄に翼がなく，基部が抱茎しない点でツガルコウモリと区別される。イヌドウナとコバナノコウモリは頂裂片が尾状に尖り，葉身の概形が三角形状になるので，ツガルコウモリやオガコウモリとは異なっている。

ミミコウモリ *P. kamtsaticus* (Maxim.) Kadota は北海道，本州（東北地方北部），及び歯舞諸島（色丹島），千島列島，カムチャツカに分布する。そのうち東北地方（青森県・秋田県）のものは花序を含めて大型になり（4倍体），一見したところ葉の概形はツガルコウモリに似ている。しかし，葉身各裂片の先端は尾状に長く伸びるので，ツガルコウモリのそれとは異なっている。また，東北地方のミミコウモリは花序が大型の複総状花序となることが多いが，花序の枝は幅が狭い総状で，総苞片が5個である点でもツガルコウモリと異なる。

細井幸兵衛氏（青森市）の他，根市益三氏（八戸市），嶋祐三氏（つがる市），工藤安昭氏（深浦町），佐藤石夫氏（深浦町），神真波氏（前青森県立郷土館）には現地調査の案内をしていただくとともに，国立科学博物館維管束植物標本庫（TNS）に標本並びに生態写真をご寄贈いただきました。ここに記して感謝の意を表します。

（国立科学博物館植物研究部）